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November 3, 2003

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EVALUATION COUNCIL

BY FAX (360) 956-2158

Dear Mr. Fiksdal:

Re: **Comments on BP Cherry Point Cogeneration Project DEIS**

I write to provide Environment Canada's comments on the September 5, 2003, Draft Environmental Impact Statement (DEIS) for the proposed BP Cherry Point Cogeneration Project ("the project"). The DEIS provides a comprehensive overview of potential environmental impacts of the project. Nonetheless, in Environment Canada's view, the final Environmental Impact Statement (EIS) should also address the issues outlined below.

The following comments draw upon an analysis of the DEIS conducted by a technical review team comprised of representatives from the Greater Vancouver Regional District, the Fraser Valley Regional District, the B.C. Ministry of Water, Land and Air Protection, and Environment Canada. I understand that this analysis has been forwarded to EFSEC by the Greater Vancouver Regional District. The technical review team analyzed air quality and greenhouse gas related impacts only, because no other environmental impacts in Canada are anticipated.

These comments address improvements to the DEIS only; Environment Canada may provide comments with respect to the project itself at the public comment stage, expected in December, 2003.

Health Effects

There is a substantial and growing body of evidence that suggests that adverse health effects would be predicted at particulate matter (less than 2.5 microns) and ozone exposure levels currently experienced in the Lower Fraser Valley.

For example, Bates et al (2003) concluded that: "*Levels of some air pollutants, particularly PM_{2.5} and its wood smoke component, and ozone, in British Columbia are at levels which, on the basis of comparisons with international data, would be predicted to be causing adverse health effects,*" and went on to recommend that: "*...any improvement in air quality for PM or ozone would result in fewer negative health impacts.*"¹ In 2001, Lower Fraser Valley Medical Health Officers stated that: "*Air pollution is an important public health issue and is linked to illness and death in the lower mainland and elsewhere. This is true despite the fact that current levels of air pollution in the lower mainland are generally stable or lower than they have been in the past and that levels*

¹ Bates, D.V., Brauer, M., Koenig, J. Q., *Health and Air Quality 2002 – Phase 1 – Methods for Estimating and Applying Relationships Between Air Pollution and Health Effects*, British Columbia Lung Association, 2003.

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of air pollution in the lower mainland are lower than other major cities in western North America.”² And Vedal et al (2003) concluded from an analysis of data from Vancouver, British Columbia, between 1994 and 1996 that “increases in low concentrations of air pollution are associated with increased daily mortality.”³

1
cont.

In order to fully describe the health and environmental impacts of the proposed project, the final EIS should include the implications of this body of evidence with respect to the project.

Particulate Matter

Due to the potential implications of the body of evidence mentioned above, and the fact that the Canada-Wide Standards for Particulate Matter (PM) and Ozone acknowledge this body of evidence and include commitments to “continuous improvement” and “keeping clean areas clean,” the final EIS should include a more thorough analysis of potential ambient concentrations of particulate matter (<2.5 microns).

2

Specifically, although the DEIS presents modeling results for worst-case ambient concentrations of PM (at the most-affected location in the Canadian Lower Fraser Valley), we understand that the models used to generate these results did not take into account the formation of secondary particulate matter. Because of the potential importance of exposure of Canadian residents to PM at levels below current objectives, the final EIS should include scientifically credible (for this airshed) modeling of worst-case ambient primary and secondary PM concentrations (including secondary particulate formation from in-plume and ambient ammonia). In order to address the worst case, such modeling should continue to ignore any “refinery offsets” or “PM adjustments,” as in the DEIS, especially for consideration of short-term exposures.

3

Start-Up Scenarios

The DEIS modeled worst-case Canadian ambient concentrations of several pollutants. It is our understanding that these worst cases were defined from “maximum potential emission” scenarios, but that these scenarios did not include start-up scenarios. Informal information received subsequently from the proponent suggests that for some parameters (e.g. nitrogen oxides and carbon monoxide), the worst-case scenario for short-term exposures in Canada may be a start-up scenario. Therefore we conclude that in order to most accurately describe the environmental impacts of the project, the final EIS should include revised ambient concentration modeling results for any parameter and “objective duration” (e.g. <=24 hours) for which a start-up scenario is the worst-case scenario. (Modeled short-duration ambient concentrations should be compared to objectives, including World Health Organization objectives.)

4

Removal of Refinery Boilers

On page 3.2-46, the DEIS states:

Enforceable conditions requiring removal of the refinery's three utility boilers within six months of the beginning of cogeneration facility operation could allow regulatory agencies to more fully take into account refinery emission reductions in the permitting and environmental review process.

5

² Copes, R., Blatherwick, J., Guasparini, R., Loewen, N., O'Connor, B., *Air Quality in the Lower Mainland: Patterns, Trends and Human Health*, South Fraser Health Region, 2001.

³ Vedal, S., Brauer, M., White, R., and Petkau, J., *Air Pollution and Daily Mortality in a City with Low Levels of Pollution*, Environmental Health Perspectives, 111:1, 2003.

To facilitate decision-making concerning this potential requirement, the final EIS could include revised worst-case ambient concentration modeling results for the above scenario (i.e. post removal of refinery boilers).

5
cont.

Airshed Emissions Context

The DEIS presents estimated expected annual emissions attributable to the project, for several parameters. The final EIS would be more conducive to decision-making if these estimates were presented in the context of the estimated total emissions (for each parameter) in the Lower Fraser Valley / Whatcom County airshed. For example the final EIS might indicate the percentage of airshed emissions that the project would represent, similar to what the DEIS presently does for greenhouse gas emissions. These estimates are available from the Greater Vancouver Regional District's July 2003 *Forecast and Backcast of the 2000 Emission Inventory for the Lower Fraser Valley Airshed 1985-2025*.

6

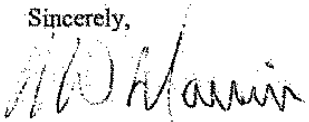
Adjustments to Particulate Matter Emissions Estimates

The treatment of particulate matter emissions in the DEIS is in places confusing and may in some instances be incorrect. Detailed comments are provided in Attachment A.

7

I trust that you will find these comments useful. Overall, the technical review team found the DEIS to provide a helpful description of potential environmental impacts.

Sincerely,



M.D. Nassichuk

Manager, Pollution Prevention and Assessment

/attach.

Cc: Ken Cameron, Greater Vancouver Regional District
Hu Wallis, British Columbia Ministry of Water, Land and Air Protection
Hugh Sloan, Fraser Valley Regional District

Attachment A**Detailed Comments on Section 3.2 of the Draft Environmental Impact Statement**

It would be helpful if the final EIS briefly discussed why expected emissions from the project exceed current emissions from the refinery boilers by different ratios for different parameters. (For example, the maximum potential PM emissions from the project appear to be 26 times higher than PM emissions from the refinery boilers at capacity, while for VOCs this ratio is 14, for SO₂ it is 7, for CO it is 3, and for NO_x it is 0.5.)

7(1)

With regard to determining the effect of refinery boiler NO_x and SO₂ emission reductions on secondary particulate formation, the technical review team suggested to BP representatives in January 2003 that a range of conversion rates (~2% to 40%) should be examined in the DEIS to address the lack of literature on the subject and the uncertainty contained within the conversion rate assumptions. The DEIS did not examine a range of conversion rates. It would be helpful if the final EIS did.

7(2)

In addition, the "one ton NO_x forms one ton PM" and "one ton SO₂ forms one ton PM" simplifications used in the DEIS are incorrect and should be corrected in the final EIS.

7(3)

There is an apparent disagreement between Tables 3.2.8 and 3.2.9, regarding sulfur dioxide and carbon monoxide concentrations. If this is not a true disagreement, then additional clarification would be helpful.

7(4)

There is an apparent disagreement between the modeled maximum PM₁₀ and PM_{2.5} concentrations in Table 3.2.15, and footnote 1 of the same table. Again, if this is not a true disagreement, then additional clarification would be helpful.

7(5)

In Table 3.2-20 the Net Regional Change in PM₁₀ Emissions should be +84 tpy instead of -84. Also, this table is quite confusing. The relationship between the rows could be made clearer in the final EIS. (For example, row 3 is the summation of rows 1 and 2, but this is not made clear.)

7(6)

Table 3.2-23 is confusing as presented. The relationship between the rows could be made clearer in the final EIS. Also, the last row appears to sum net emissions incorrectly.

7(7)

Lower Fraser Valley air quality monitoring data is now available for 2002; this could be substituted for the 2001 data used in the DEIS.

7(8)